REMARKS

The present application was filed on April 14, 2004 with claims 1 through 20. Claims 1 through 20 are presently pending in the above-identified patent application. Claims 13 and 17 are proposed to be amended herein.

In the Office Action, the Examiner rejected claims 13 and 17 due to indicated informalities. The Examiner also rejected claims 1, 2, 8-12, 18, and 19 under 35 U.S.C. §102(b) as being anticipated by Feyh et al. (United States Patent Number 6,111,710) and rejected claims 3 and 13 under 35 U.S.C. §103(a) as being unpatentable over Feyh et al. in view of Reed (United States Patent Number 6,549,351). The Examiner indicated that claims 4-7, 14-17, and 20 would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.

Formal Objections

Claims 13 and 17 were objected to due to indicated informalities. Regarding claim 13, the Examiner asserts that the recitation "...said peak levels..." lacks antecedent basis. Regarding claim 17, the Examiner asserts that the recitation concerning the indication of a "strength" of the signal asymmetry could not be found to be described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 13 has been amended to correct the antecedent basis of the cited term. Claim 17 has been amended to require "wherein said sum provides an indication of a *degree* of said signal asymmetry." Applicants note that the current specification teaches that,

> according to one aspect of the invention, a signal asymmetry measure is computed for the portion of each sample sequence and is used to adjust an ideal sample sequence.
>
> The signal asymmetry measure indicates the *extent of signal asymmetry in the data*. The signal asymmetry measure may be, for example, a sum of values corresponding to one or more positive and negative peaks in the data. The sum of values can be used to adjust the ideal sample sequence and compensate for the signal asymmetry. The signal asymmetry measure can be averaged over a number of successful attempts to read the data. A positive signal asymmetry measure indicates that the peak levels have higher values than expected peak values. A negative signal asymmetry measure indicates that the peak levels have lower values than expected peak values.

(Page 2, line 24, to page 3, line 4; emphasis added.)

A person of ordinary skill in the art would therefore recognize the meaning of "a degree of signal asymmetry" to be, for example, the degree to which the signal is asymmetric.

Independent Claims 1, 11 and 19

Independent claims 1, 11, and 19 were rejected under 35 U.S.C. §102(b) as being anticipated by Feyh et al. Regarding claim 1, the Examiner asserts that Feyh et al. disclose wherein the ideal sample sequence corresponds to peaks in the data (col. 11, lines 21-47), and a detector to select a sample sequence based on the distance measures for use in detecting the data (col. 10, lines 23-25).

Applicants note that, in the text cited by the Examiner, Feyh teaches that

> the function of the interpolator is to estimate the target sample value by interpolating the channel sample values. For illustrative purposes, consider a simple estimation algorithm, linear interpolation:
>
> $$Y(N-1)=x(N-1)+\tau(x(N)-x(N-1)) \quad (1)$$
>
> where x(N-1) and x(N) are the channel samples surrounding the target sample, and τ is an interpolation interval proportional to a time difference between the channel sample value x(N-1) and the target sample value. The interpolation interval τ 190 is generated at the output of modulo-Ts accumulator 132 which accumulates the frequency offset signal Δf at the output of the PID loop filter 146:
>
> $$\tau = (\Sigma \Delta f)\ MOD\ TS$$
>
> where Ts is the sampling period of the sampling clock 108. Since the sampling clock 108 samples the analog read signal 62 slightly faster than the baud rate, it is necessary to mask the data clock every time the accumulated frequency offset Δf, integer divided by Ts, increments by 1. Operation of the data clock 104 and the mask signal 144 generated by the mod-T_s accumulator 132 is understood with reference to the timing diagram of FIG. 5.
> (Col. 11, lines 21-47.)

Feyh teaches *where to sample data*; Feyh, however, does ***not*** teach that the ideal sample sequence *corresponds to peaks in the data.* Independent claims 1, 11, and 19 require wherein the ideal sample sequence *corresponds to peaks in the data.*

Applicants also note that, in the text cited by the Examiner, Feyh teaches that "a multiplexer 140 selects the estimated sample values $\sim Y_{k+\tau}$ from the slicer 122 for use by the phase error detector 118 during tracking." (Col. 10, lines 23-25.) The selection made by MUX 140 is determined by the ACQ/TRK signal (see, FIG. 4B). Thus, the selection is ***not*** based on distance measures. Independent claims 1 and 11 require selecting a sample sequence *based on the distance measures.*

Thus, Feyh et al. do not disclose or suggest wherein the ideal sample sequence corresponds to peaks in the data, as required by independent claims 1, 11, and 19, and do not disclose or suggest selecting a sample sequence based on the distance measures, as required by independent claims 1 and 11.

Additional Cited References

Reed was also cited by the Examiner for its disclosure of a device for data detection wherein peaks are used to detect RRO marks (i.e. RRO bit) for the purpose of compensating for repeatable run-out (col. 5, lines 24-44). Reed, however, does not disclose or suggest that the ideal sample sequence *corresponds to peaks in the data,* and does not disclose or suggest that the *selection is based on distance measures.*

Thus, Reed does not disclose or suggest wherein the ideal sample sequence corresponds to peaks in the data, as required by independent claims 1, 11, and 19, and does not disclose or suggest selecting a sample sequence based on the distance measures, as required by independent claims 1 and 11.

Dependent Claims 2-10, 12-18 and 20

Dependent claims 2, 8-10, 12, and 18 were rejected under 35 U.S.C. §102(b) as being anticipated by Feyh et al. and claims 3 and 13 were rejected under 35 U.S.C. §103(a) as being unpatentable over Feyh et al. in view of Reed.

Claims 2-10, 12-18, and 20 are dependent on claims 1, 11, and 19, respectively, and are therefore patentably distinguished over Feyhs et al. and Reed (alone or in any combination) because of their dependency from independent claims 1, 11, and 19 for the reasons set forth above, as well as other elements these claims add in combination to their base claim. The Examiner has already indicated that claims 4-7, 14-17, and 20 would be allowable if

rewritten in independent form including all of the limitations of the base claims and any intervening claims.

All of the pending claims, i.e., claims 1-20, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

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Kevin M. Mason
Attorney for Applicants
Reg. No. 36,597
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560